

CLAIMS

~~1. A base station configuration in a two-way communication interactive data broadcast network having network hub switching center means for routing communications from and to a plurality of subscriber units comprising:~~

subscriber units dispersed at various locations within a predetermined base station geographic area, said subscriber units including switching means for selecting a communication path within 10 said interactive data broadcast network,

local base station repeater cell means for communicating with identified individual subscriber units within a local base station geographic area associated with said local base station repeater cell means, said local base station repeater cell means further comprising,

15 base station data processing and transmission means for transmitting to a set of said local subscriber units contained within said local base station geographic area associated with said local base station repeater cell means and receiving from a subset of said local set of subscriber units multiplexed

20 synchronously related digital data messages of variable lengths for point-to-point communication between said local base station repeater cell means and said subset of said local subscriber units, reception means for receiving and processing data messages from said set of local subscriber units comprising a local remote receiver

25 disposed within one of a plurality of cell subdivision site partitioned from said local base station geographic area associated with said local base station repeater cell means, said plurality of cell subdivision sites

~~dispersed over said local base station geographic area, each local remote receiver adapted for receiving-only low power digital messages transmitted from said local subscriber units within range of said local remote receiver,~~

5 a set of local subscriber transceiver units including low power mobile units located within said local base station geographic area, each of said local subscriber transceiver units adapted to communicate with said local base station repeater cell means by way of digital data signals of variable lengths synchronously related to a base station broadcast

10 signal and timed for multiplexed message transmission, and

modem means communicatively coupled to said local subscriber units and said local base station repeater cell means for transferring said multiplexed synchronously related digital data messages of variable lengths between said local subscriber units and said local base

15 station repeater cell means when said local subscriber units are unable to communicate directly with said local base station repeater cell means.

2. The base station configuration of Claim 1 wherein said modem means and said local subscriber units are communicatively coupled via

20 an rf link.

3. The base station configuration of Claim 2 wherein said rf link between said modem means and said local subscriber units is at an rf carrier frequency of approximately 218-219 MHz. →

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~~4. The base station configuration of Claim 1 wherein said modem means and said local base station repeater cell means are communicatively coupled via a telephone line.~~

5 5. A method of communicating between local subscriber units and a local base station repeater cell in a two-way communication interactive data broadcast network comprising the steps of:

transmitting data from a local base station repeater cell to a modem communicatively coupled to said local base station repeater cell,
10 and
transmitting said data received by said modem to a subscriber unit communicatively coupled to said modem.

15 6. The communication method of Claim 5 further comprising the steps of:

transmitting a response from said subscriber unit to said modem,
and
transmitting said response received by said modem to said local base station repeater cell.

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~~7. The communication method of Claim 5 wherein the step of transmitting data from a local base station repeater cell to a modem further comprises transmitting said data from said local base station repeater cell to said modem via a telephone line.~~

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~~8. The communication method of Claim 5 wherein the step of transmitting data from a modem to a subscriber unit further comprises~~

~~transmitting said data from said modem to said subscriber unit via an rf link.~~

9. The communication method of Claim 8 wherein the step of
5 transmitting said data from said modem to said subscriber unit via an rf link further comprises transmitting said data from said modem to said subscriber unit at an rf carrier frequency of approximately 218-219 MHz.

10. The communication method of Claim 6 wherein the step of
10 transmitting said response from said subscriber unit to said modem further comprises transmitting said data from said subscriber unit to said modem via an rf link.

11. The communication method of Claim 10 wherein the step of
15 transmitting said response from said subscriber unit to said modem via an rf link further comprises transmitting said response from said subscriber unit to said modem at an rf carrier frequency of approximately 218-219 MHz.

20 12. The communication method of Claim 6 wherein the step of transmitting said response from said modem to said local base station repeater cell further comprises transmitting said response from said modem to said local base station repeater cell via a telephone line.

25 13. A digital cellular communication system comprising in combination, a cell site divided into a plurality of subdivided zones, a plurality of subscriber units with identity numbers based in said cell

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~~site, a cell site communication system including a digital transmitter for communication with individual identified subscriber units geographically located within the cell site, a set of receive only digital receivers positioned in said subdivided zones, each said digital receiver~~

5 ~~being coupled by a transmission link with the cell site communication system to relay received digital communications, and a set of said subscriber units comprising portable wireless digital communication units with a limited power digital transmitter having a transmitting power for transmissions within the area of the subdivided zones and a~~

10 ~~receiver for reception of digital messages from said cell site digital transmitter, modem means communicatively coupled to said local subscriber units and said digital transmitter for transferring data between said subscriber units and said digital transmitter when said subscriber units are unable to communicate directly with said digital~~

15 ~~transmitter.~~

14. A two-way communication system for an interactive data broadcast network comprising:

at least one subscriber unit disposed within a predetermined base

20 station geographic area, said at least one subscriber unit including switching means for selecting a communication path within said interactive data broadcast network,

network hub switching center means for routing communications from and to said at least one subscriber unit, and

25 modem means communicatively coupled to said at least one subscriber unit and said network hub switching center means for ~~transferring multiplexed synchronously related digital data messages of~~

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~~variable lengths between said at least one subscriber unit and said network hub switching center means when said at least one subscriber unit is unable to communicate directly with a local base station repeater cell, said modem means also adapted for communicating with a local base station repeater cell when a local base station repeater cell becomes available.~~

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15. The base station configuration of Claim 14 wherein said modem means and said at least one subscriber unit is communicatively coupled via an rf link.

16. The base station configuration of Claim 15 wherein said rf link between said modem means and said at least one subscriber unit is at an rf carrier frequency of approximately 218-219 MHz.

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17. The base station configuration of Claim 14 wherein said modem means and said network hub switching center means are ~~communicatively coupled via a telephone line.~~

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18. A method of communicating between a subscriber unit and a network hub switching center in a two-way communication interactive data broadcast network comprising the steps of:

transmitting data from a network hub switching center to a modem communicatively coupled to said network hub switching center,
25 and

transmitting said data received by said modem to a subscriber unit communicatively coupled to said modem.

19. The communication method of Claim 18 further comprising the steps of:

transmitting a response from said subscriber unit to said modem,
5 and
transmitting said response received by said modem to said network hub switching center.

20. The communication method of Claim 18 wherein the step of
10 transmitting data from a network hub switching center to a modem further comprises transmitting said data from said network hub switching center to said modem via a telephone line.

21. The communication method of Claim 18 wherein the step of
15 transmitting data from a modem to a subscriber unit further comprises transmitting said data from said modem to said subscriber unit via an rf link.

22. The communication method of Claim 21 wherein the step of
20 transmitting said data from said modem to said subscriber unit via an rf link further comprises transmitting said data from said modem to said subscriber unit at an rf carrier frequency of approximately 218-219 MHz.

23. The communication method of Claim 19 wherein the step of
25 transmitting said response from said subscriber unit to said modem further comprises transmitting said data from said subscriber unit to said modem via an rf link.

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~~24. The communication method of Claim 23 wherein the step of transmitting said response from said subscriber unit to said modem via an rf link further comprises transmitting said response from said subscriber unit to said modem at an rf carrier frequency of approximately 218-219 MHz.~~

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~~25. The communication method of Claim 19 wherein the step of transmitting said response from said modem to said network hub switching center further comprises transmitting said response from said modem to said network hub switching center via a telephone line.~~

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